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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,761	11/03/2000	Sang-Seog Kang	IK-011	4364
34610	7590	11/05/2003	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			ABDULSELAM, ABBAS I	
			ART UNIT	PAPER NUMBER
			2674	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/704,761

Applicant(s)

KANG, SANG-SEOG

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections 35 U.S.C. 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldwell et al. (USPN 5153572) in view of Kasai (USPN 6545614).

Regarding claims 1, 10 and 18, Caldwell teaches a touch sensitive control circuit (10) including comparators (U2, U3), and a detection means (102) for detecting a voltage signal output (72). See col. 3, lines 8-25 col. 4, lines 17-22, 50 and Fig 1a. Caldwell teaches that the detection means also has time delay means expressed in terms of capacitor (122) and resistor (123). See col. 5, lines 25-26. Caldwell teaches the detection means in terms of a switching of either outputs (83) or (85). See col. 4, lines 66-67. However, Caldwell does not disclose a "a compensator which adjusts a reference signal for a variation in temperature of the glass touch sensing circuit, compares an output signal from the switch proportional to the touch sensor signal with that of the adjusted reference signal, and outputs a wave-shaped signal." Kasai on the other

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hand teaches a temperature sensor (10) in a discriminator unit (7), whereby in response to an output signal from temperature sensor (10), the reference voltage used in discriminator unit (7) is varied to correct for the temperature characteristics in detector unit (6). See Fig. 26 and col. 7, lines 38-45. In addition referring, Fig. 23, Kasai illustrates an example for a discriminator unit (7) in which comparator (41) compares the detected voltage with a reference voltage and operational amplifier (42) uses a diode (43), which is the same as that used to detect the wave in the detector unit. See col. 7, lines 7-17. Furthermore, Kasai shows (Fig. 3) the principle of detection with respect to a finger touching the area between electrodes (2, 3). See col. 3, lines 27-37 and Fig. 3.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Caldwell's touch-sensitive control circuit to adapt Kasai's discriminator unit (7). One would have been motivated in view of the suggestion in Kasai that discriminator unit (7) as configured in Fig. 23 and Fig. 26 is functionally equivalent to the desired compensator. The use of a discriminator unit (7) helps function a touch sensor detecting the touch of a human finger as taught by Kasai.

Moreover, Kasai teaches that that in discriminator unit (7), the reflected wave varies according to the frequency as shown in Fig. 27. Furthermore, by detecting the reflected wave and comparing it with a reference signal in the discriminator unit, it can be determined that the reflection level is lower and as a consequence, a conclusion can be made that the electrode is touched by a person. See the abstract.

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Regarding claim 2, Caldwell teaches the charging of a capacitor after a user contacts a touch pad (32). See col. 2, lines 44-47

Regarding claims 3-4, Caldwell teaches a user touching on pad (30), a comparator (U3), and output (72) expressed with respect to reference voltage at junction (66). See col. 3, lines 27-38.

Regarding claims 5-7, 9, 20-21 and 23, Caldwell teaches a control circuit performing logic operations on the basis of ratiometric relationship of signals differing in proportion to the supply of voltage provided. See col. 1, lines 65-67. Caldwell further teaches a touch sensitive control circuit including temperature compensated comparators U1 through U8 performing a variety of comparative tasks. See Fig 1.

Regarding claim 8, Caldwell teaches an output (92) that is connected through a diode (96) to the base (98) of a transistor Q1. See col. 4, lines 1-2 and Fig 1b.

Regarding claim 11, Kasai discloses (Fig. 25) a discriminator unit (7) using the output oscillator unit (1) as its reference voltage and a detector unit (6) performing in a stable fashion regardless of temperature variations. See col. 7, lines 29-37 and Fig. 25.

Regarding claims 12, 17 and 22, Kasai teaches a temperature sensor (62), and an automatic gain control circuit (61) is provided such that temperature changes can be compensated. See Fig. 30.

Regarding claim 13, Kasai teaches a discriminator unit (7) including a comparator (41) comparing the detected voltage with a reference voltage. See col. 7, lines 7-18.

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Regarding claims 14-16 and 19, Kasai discloses that the output voltage of a diode in detector unit (6), which detects the wave varies with the ambient temperature. See col. 7, lines 29-37 and Fig. 25.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

4. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

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October 31, 2003


RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600